

The Regional Biomass Energy Program (RBEP) promotes increased production and use of bioenergy resources, and helps advance the use of renewable biomass feedstocks and technologies. Historically, the RBEP leverages two nonfederal dollars for every federal dollar it administers.

Benefits of Landfill Gas Conversion

- Turns gas produced by municipal solid waste landfills into usable energy
- Reduces greenhouse gas emissions
- Costs less than many other energy sources
- Maximizes local economies of scale for energy producers and consumers
- Creates jobs

“With energy costs increasing, the economics of landfill gas conversion are easy to understand, and people are paying attention. South Carolina is proving that government and industry can work together to benefit the private sector, the public sector, and the environment.”

Sonny DuBose
Program Coordinator
South Carolina Energy Office



**U.S. Department
of Energy
Regional Biomass
Energy Program**

www.ott.doe.gov/rbep

ANOTHER RBEP SUCCESS: Turning landfill gas into electricity in South Carolina

CHALLENGE

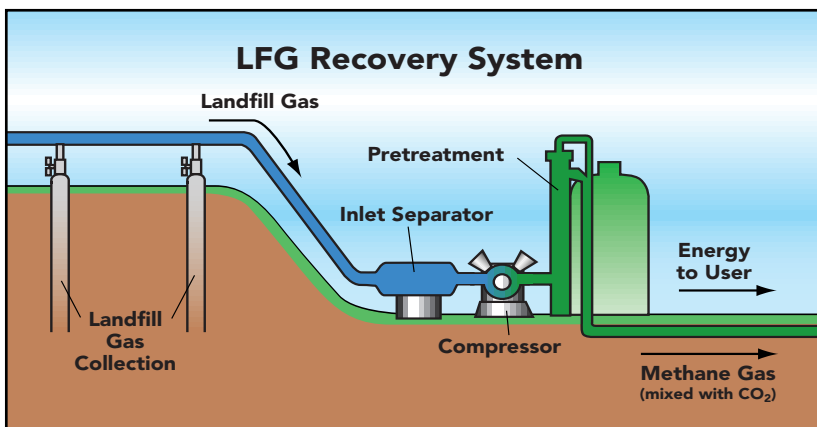
Municipal solid waste landfills are a fact of life, and the gas they generate as waste decomposes is undesirable for many reasons. Typically flared to the atmosphere, the gas produces unpleasant odors and releases nearly equal amounts of the greenhouse gases methane and carbon dioxide into the air.

RBEP SOLUTION

The U.S. Department of Energy’s Regional Biomass Energy Program is funding projects in South Carolina to turn Landfill Gas (LFG) into energy. LFG can be converted and used to generate electricity, heat, or steam. It is the one renewable energy source that actually removes pollution from the atmosphere when captured and processed.

Vertical wells are placed throughout a landfill (at a density of approximately one well per acre of municipal solid waste) to extract the gas. These wells are connected by a series of horizontal pipes to a central location. A partial vacuum created in the piping system causes the landfill gas to migrate toward the wells. Once delivered to a central point, the gas can either be flared to the atmosphere or captured and processed into another energy form.

LFG energy recovery is regarded as one of the more mature and successful renewable energy technologies, and the U.S. Environmental Protection Agency actively promotes landfill gas conversion, though it is not mandatory. Many states offer significant tax incentives to companies undertaking LFG conversion projects.



Award

The South Carolina Energy Office was named "State Ally of the Year" for 2001 by the U.S. Environmental Protection Agency's Landfill Methane Outreach Program.

Partners

U.S. Department of Energy
Regional Biomass Energy Program
South Carolina Energy Office

In South Carolina, officials estimate as many as 30 existing landfills are capable of generating high-quality landfill gas for use as industrial energy. Successful partnerships between government and industry position the state as a potential national role model for converting landfill gas to usable energy.



Testing a landfill gas wellhead
(Photo courtesy of Ameresco, Inc.)

Web-based Landfill Gas Information Resources

South Carolina Landfill Methane Outreach Program
<http://www.state.sc.us/energy/lmop.htm>

South Carolina State Landfill Gas Primer
http://www.epa.gov/lmop/st_primers/scar_pmr.pdf

U.S. Environmental Protection Agency
Landfill Methane Outreach Program
<http://www.epa.gov/lmop>

Database of State Incentives for Renewable Energy
<http://www.dsireusa.org>

RESULTS

Working with RBEP, local landfill operators, and industrial partners, the South Carolina Energy Office is close to completing conversion of the 196-acre Palmetto Landfill in Spartanburg County, South Carolina. In this project, the landfill will produce energy that a large international automotive manufacturer will use to power its nearby production facility. In addition to the environmental benefits of using LFG, the project will enable the company to maximize use of its on-site electrical production equipment, something it has done only seasonally in the past when electricity prices spiked to above-average levels.

BENEFITS

Converting landfill gas to energy creates a win-win situation for landfill operators and the communities they serve. Industrial partners can realize significant reductions in their energy costs, and the public benefits from reduced greenhouse gas production.

For more information:

Kathryn Baskin
Southern States Energy Board
6325 Amherst Court
Norcross GA 30092

Phone: (770) 242-7711

Fax: (770) 242-9956

E-mail: baskin@sseb.org

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